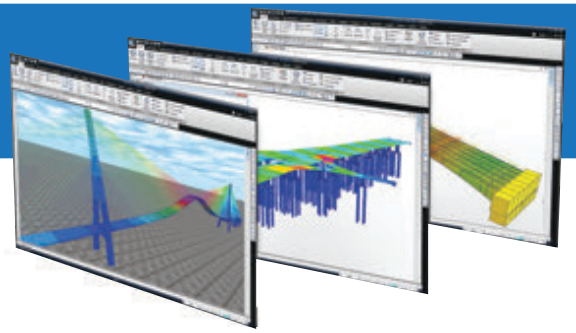
midas Civil 2020



midas Civil is a Finite Element Analysis software developed by MIDASoft, used for bridge analysis and design. midas Civil combines the powerful pre and post processing features with an extremely fast solver which makes bridge modeling and analysis simple, quick and effective. Also, there are several easy parameter modification tools available which can be used for parametric analysis leading to optimized and economical design.

01. Modules

Conventional Version

midas Civil Conventional module carries wizards for quick modeling of conventional bridges in 2D and 3D as well as most user friendly GUI for easy modification and result extraction

For Who? Engineers handling structural analysis and design of conventional bridges as listed below and general structures.

Advantages Can handle concrete as well as steel bridges / Super and Sub structure analysis on same platform

Precast Girder Bridge

Steel Plate Girder Bridge

Culvert

Slab Bridge

Steel Arch Bridge

Truss Bridge

Steel Box Girder Bridge

Multi-Cell Box Girder Bridge

Push Over Analysis

Dynamic Analysis

Moving Load

Integral Abutment

- Unlimited Nodes (Elements)
- Static Analysis / Dynamic Analysis
- Vehicle Load Optimization
  - AASHTO LRFD
  - CAN/CSA-S6S1
  - Super (permit) Load
  - Influence Line/Surface
  - Moving Load Tracer & Force Envelopes
- P-Delta Analysis
- Wizards (Slab, RC Frame & Culvert auto- generators)
- Integral Bridge Module (Soil-Structure Interaction)
- Grillage Model Auto- Generation (Multi-Cell Box Girders)
- Settlement Analysis / Pushover Analysis
- Composite Girder Design (PSC & Steel)
  - PSC Wizard with automatic tendon generator for detailed tendon profiler
  - 3D Steel curved cross frame modeling for accurate design
  - Construction sequencing with composite loads and time dependent material behavior
  - Optimization of live loads for super and substructure design
- Composite Bridge Analysis (PC & Steel)
- Construction Stage Analysis (Up to 10 stages)
- Post- tensioned Girder: AASHTO- LRFD (2012) & CSA-S6 (2010)
- CSA-S6S1 : Post- tensioned Girder Bridge Design
- Bridge Rating of Box Sections as per AASHTO LRFR
- Dynamic Report Generation
- Response Spectrum
- Eigenvalue Analysis

Advanced Version

midas Civil Advanced module is a super set of midas Civil conventional version. It carries bridge specific wizards to save the modeling time for engineers dealing with advanced bridge types like segmental, cable stayed and suspension bridges.

For Who? Engineers dealing with challenging structures requiring complex analysis.

Advantages Wizards to generate the geometry along with construction stages and tendon placement in 3D. Unique tools for automatic cable force optimization at final stage and construction stages.

Cable Stayed Bridge

PSC Bridge

Suspension Bridge

Long Span Bridge

Concrete Arch Bridge

Extradosed Bridge

Movable Scaffolding Bridge

Nonlinear Dynamic Analysis

Incremental Launching Bridge

Precast Segmental Bridge

Balanced Cantilever Bridge

Full Staging Bridge

- Includes Conventional Version functionality and :
- Construction Stage Analysis (unlimited number of stages) & Nonlinear Static Analysis
- Segmental Post- tensioned Bridge Wizards
  - FCM (Balanced Cantilever Method)
  - ILM (Incremental Launching Method)
  - MSS (Movable Scaffolding System)
  - FSM (Full Staging Method)
  - P SC (Prestressed/Post tensioned Concrete)
- Large Displacement (Forward/Backward) Analysis
  - Suspension Bridge Wizard
  - Cable Stayed Bridge Wizard
  - Cable Tuning
- Boundary Nonlinear Dynamic An alysis
  - Gap
  - Hook
  - Damper
  - Isolator
  - Hysteretic System
  - Etc.

02. Options

FEA NX Modeler

- 3D CAD - DWG, DXF 2D & 3D STEP & IGES
- Geometry Modeling - Curve, Surface, Solid, and Irregular
- Mesh Generation - Auto, Map, Hybrid, Protrude Mesh

Higher Analysis

- Inelastic Time History Analysis
- Material Nonlinear Analysis
- Heat of Hydration Analysis
- Fiber modeling
- Tresca, von Mises, Mohr Coulomb, Drucker-Pra ger and Masonary models

GSD (General Section Designer)

- Draw Arbitrary Cross-sections (RC, Steel, Composite)
- Interaction Curves (P- M, M-M, P-M-M) & Capacity Check Ratio (AASHTO LRFD,CSA,ACI)
- Moment-Curvature Curves for Different Axial Loads
- Stress Contours for Combined Loading

Rail Track Interaction

- Auto-gene ration of railway analysis models (simplified & complete analysis)
- CWR Thermal, Braking & Accelerating force analysis
- Auto-gene ration of multi-linear b alast links
- Train moving load analysis